THE NEED FOR COORDINATION OF URBAN IMPROVEMENT PROGRAMS

JAMES SMITH
Wilbur Smith and Associates, Consulting Engineers, Columbia, S. C.

Urban improvements too often are conceived and provided in relative isolation, without regard to community organization and developments. This is true particularly of transportation programs. In many cases, studies are conducted haphazardly, on a relatively small scale, and rarely in terms of the over-all problem of mobility.

A coordinated approach is essential for a sound, effective urban transportation program. This should involve all modes of transportation and all interested organizations and governmental agencies.

The transportation plan of every urban area also should take into account the desires of individuals and their ability to pay for the services they desire. At the same time, it should consider the abilities and responsibilities of government to provide or to assist in providing basic components of each part of the urban transportation system.

Urban Trends

Within the last decade, significant strides have been made in technological fields. Despite this, the continuing expansion of American urban areas has made the daily movement of people and goods a difficult and complex problem. Today's metropolis is spreading in every direction. Strong social and economic forces are causing this expansion of area and population. Land that was considered remote only yesterday is being occupied today by people who work, shop, or visit in the urban center and its environs.

Two of every three residents of the United States now live in urbanized areas. Half of these urbanites reside outside central cities. Eighty-five per cent of the increase in population during the past 10 years occurred in and around cities of 50,000 or more. Outlying urban areas accounted for two thirds of the total increase.

Population of urban areas is expected to reach 180 million by 1980—as much as the country's entire population today. Most growth will be at densities of approximately 2,500 people per square mile. This means that by 1980, land within urban areas will double that of today.

The low-density development in the suburbs is tending to increase average trip lengths. At the same time, it is decreasing the proportion of short trips. Construction of more urban freeways will further encourage the production of long trips.

First, they will reduce travel time between many parts of the city, which, in turn, will increase the mutual attraction of such areas. Workers will have access to larger employment markets and employers will be able to choose from larger
labor pools. New freeways will also stimulate urbanization of undeveloped areas in their vicinity.

And second, although making most trips longer in distance, they will shorten average driving times. Studies have shown that drivers seek the quickest path between their origin and destination. Often, they go out of their way to use freeways if they can save time. By 1980, the combination of these factors can be expected to increase average trip length in urban areas by 10 to 15 per cent.

In Washington and Pittsburgh, the average car travels about 13 miles each day; in St. Louis and Chicago, over 18 miles a day. By 1980, travel distances are expected to be 50 per cent above present levels.

As urban areas expand, new patterns of land use and travel emerge. Trip patterns are dynamic in character; they respond to competition, to changes in the direction of urban growth, and to transition from public to private transportation. The move to the suburbs has precipitated new shopping centers and a dispersal of commercial services and industrial plants. These have created greater work opportunities in suburban areas. In downtown areas, there has been a relative drop in sales and employment with the central business district becoming more specialized as the center of government, management, and finance.

These developments have fostered increased dependence on motor vehicle transportation. However, in some instances, the popularity of the motor vehicle has limited its efficiency, particularly in larger cities. Its acceptance and use have outpaced the building of adequate roads and parking, or terminal facilities. This is pointed up by the fact that approximately three of every four families in the United States now own cars. And by 1980, the ratio of private cars to persons is expected to increase about 20 per cent, with one registered for every 2.4 persons.

**Effect of Interstate Highways**

The interstate highway mileage currently programmed for urban areas will contribute substantially to urban mobility. At the same time, the heavier traffic loads emptying on already inadequate city streets will compound congestion and decrease the effectiveness of freeways.

The interstate mileage in urban areas, therefore, will need to be extended and supplemented by other freeways to provide desired capacities and to complete street networks.

Studies of prospective 1980 highway needs indicate that, on the average, in cities of every size and type, the expected increases in car ownership and extension of low-density land uses justify about one mile of freeway for every 10,000 urban residents. On this basis, today's urban population of 120 million should be served with about 12,000 miles of freeway. By 1980, 18,000 miles would be needed. In other words, unless additional freeways are provided within the next 20 years, the interstate system mileage within urban areas at that time will fall short of expected needs by almost 50 per cent.

Many complementary services will be needed to enable these freeways to function effectively. These include improved arterial and collector streets, downtown terminal facilities, and, in some cases, transit.

**Urban Transportation Needs**

Urban transportation needs vary widely. Obviously, needs in areas of different size are different and often, they are different between areas of similar size.

In smaller urban areas, population is generally of low density and well dispersed. Their need for highway facilities in relation to the need for transit service naturally is greater in proportion than in larger areas where some form of extensive public transportation is desirable.
In smaller urban communities, the matter of different political jurisdictions is usually not a major concern. However, in larger metropolitan complexes, where as many as 40 or 50 different governmental entities may be involved, transportation problems become extremely complex. Not only are the needs greater, but they are complicated by the necessity for cooperative action in determining areas of responsibility and proper allocation of costs.

As to freeway needs, a completed system in any metropolitan area can be expected to accommodate a significant part of its vehicular travel. But, the proportion of trips and vehicle-miles of travel assignable to an adequate freeway system increases with city size. This is substantiated by recent origin-destination studies conducted in cities ranging in population from 350,000 to 3 million. For example, the proportion of vehicle miles of travel potential to freeway systems in Nashville was 31 per cent, compared to 53 per cent in Detroit.

In most communities of less than 100,000, volumes assignable to freeway systems can generally be accommodated on high-type arterials. This is not to imply that freeways should not be constructed in these areas. Rather, the general criteria should be modified. Small cities located in heavy traffic corridors that connect larger urban areas often do need freeways. As urban areas exceed two million people, volumes potential to some heavier traveled routes exceed capacities that can be provided under present concepts of freeway planning.

A Balanced System

Officials at all levels of government are demonstrating an increasing awareness of the need for balanced transportation systems to properly serve the growing requirements of urban areas.

A balanced system includes expressways, arterials, collectors, transit, and terminal facilities. Expressways serve the essential purpose of relieving arterial and other city streets. Without them, it would not be possible to accommodate the rapidly expanding travel in urban areas. And although arterial street traffic is being relieved by expressways, it can be expected to attain present levels again by 1980.

In planning for urban travel requirements, discussions usually center around the question, “How much transit?” On one hand, there are those who say, “All transit.” Others contend that it can be done entirely with automobiles. Obviously, the correct answer is somewhere in between, and this can vary drastically from city to city.

The form and density of development in many urban areas demand some means of public transportation. Although transit does not serve the majority of trips, it is valuable in serving movements that are concentrated in space and time, especially in large, high-density urban complexes. “Standby” transit service is vitally important in relieving peak-hour congestion.

Except in the largest cities, future mass transit will likely be provided by express buses. Such operations usually involve lower capital costs, provide greater coverage, are better adapted to low or medium density areas, and permit routes and services to adapt to changing land-use and population patterns.

Perhaps as important as any other facet of the urban transportation problem is that of parking. Like all other transportation media, the automobile has limited value if routes of travel alone are provided. Highways must be complemented with adequate terminal facilities. The motorist demands a place to park near his destination.

Generally, three types of facilities are desirable if adequate parking is to be provided for the entire central business district. Facilities should be situated in the core area, preferably adjacent to or as an integral part of major generators. This provides the parking turnover required for shopping and business patrons.

A second ring of facilities around the core area would provide parking for
nearby short-time generators as well as all-day parking for motorists destined to the core area. And finally, facilities are needed at the fringe primarily for use by all-day parkers.

A garage capacity ranging between 400 and 600 spaces is adequate to serve most parking concentrations. Although the use of a garage depends upon its proximity to major generators, type of service, and rate schedule, the average garage accommodates 1.4 parkers per space per day or 530 parkers per space annually. Self-parking facilities are rapidly becoming acceptable to all types of parkers, including shoppers, businessmen, and employees. There may or may not be a direct functional relationship between the parking areas and the freeway.

Under certain conditions, public agencies sanction the use of right-of-way on the interstate system for parking. These conditions usually specify that parking be for public use and under state or city control. Design difficulties, however, often preclude this in many central areas.

Excellent opportunities to provide needed parking facilities are currently being offered through downtown revitalization and urban renewal programs which are being undertaken in more than 80 cities. Although they vary, nearly all embody “integration of transportation forms” and “functional segregation of classes of traffic”. Freeways and parking are basic to the implementation of these plans.

Cooperation Essential

A sound transportation program should be a joint and coordinated effort of every city department that has a transportation function. Likewise, the composite plan should be a cooperative effort of the cities, the suburbs, the counties, transit management, the state highway department, and the federal government.

Many independently planned transportation facilities prove unwise in the light of the over-all picture. Although most transportation planning is based on a demonstrated need for a particular facility, it is impossible for the independent highway planner to know what other influences will be at work to change the future aspects of the community. Nor can be realize all of the effects his work will have on the usefulness and value of land involved.

A sound transportation program should be a living part of over-all community planning. It must be related to existing and future land use, population growth, urban renewal, and public building. Or, to put it another way, it must consider all facilities of urban growth and development. If taken into the planning process, it becomes a powerful tool for reshaping living and working arrangements and laying the groundwork for sound regional growth.

Many of the problems of cities today stem from the fact that this apparently simple fact has not always been recognized. In the past, housing and community development have proceeded without adequate planning for transportation facilities. Meanwhile, those charged with the planning of transportation facilities have moved ahead without considering what those facilities might do to the cities. An apparent solution to one problem frequently compounded another problem.

Recently, however, there has been a rising tide of awareness that fighting urban blight and traffic problems independently involves the risk of losing both battles. Recognizing this at the federal level, the Housing Administrator and the Secretary of Commerce, each responsible for aspects of the urban transportation problem, have taken steps to better facilitate an over-all approach. Grants for highway planning (H.P.S., or highway planning survey funds) are made available through the Bureau of Public Roads to the states. Grants for urban planning are handled by the Housing and Home Finance agency’s Urban Renewal Administration.

Under a new arrangement, state and local bodies will be enabled to pool
funds from both sources to coordinate planning that will embrace highway and general urban plans. Joint committee machinery has been established at the Washington and regional levels to carry out this combined effort.

Up to this point, we have been talking primarily about the ingredients of a desirable transportation plan, with emphasis on the need for the traffic or transportation engineer to integrate his plan with the over-all community or regional plan. What, then, is the role of the planner in this cooperative relationship?

First of all, he is responsible for developing the over-all plan. To be workable and effective, this master plan should contain six basic components; a land-use plan, a thoroughfare plan, a community facilities plan, a public improvements program, a zoning ordinance and map, and sub-division regulations.

Comprehensive studies should precede the formulation of the over-all plan—studies particularly in terms of population, economy, and land use. These can show, for example, what a community's needs will be for residential, commercial, and industrial areas; for thoroughfares and street services; for schools, parks, and other public facilities.

Since no community exists in a vacuum, regional influences such as location, economics, resources, transportation, and population, must be taken into account. The community may itself be a dominant urban center, or it may be a satellite of a larger city or one of a cluster of urban centers. Again, it may be a county seat or a trading center. In any case, each community plays a particular role and performs specific functions within its region. These must be recognized in the planning process.

It is particularly important that a community relate its planning program to those of nearby or adjacent municipalities, and to programs in any metropolitan areas of which it may be a part.

In recognition of the importance of planning across the lines of local political jurisdictions, the Federal Housing Act of 1954 authorized grants to state planning agencies for assistance to smaller localities. It also makes funds available to state, metropolitan or regional agencies for planning work of metropolitan or regional scope.

The Housing Act of 1959, which expanded this program, emphasized the desirability of planning for urban areas in their entirety. The Housing Act of 1961 raised the amount of the federal grant from one half to two thirds of the project cost and added language making it clear that mass transportation surveys and plans were eligible for this assistance.

**In Conclusion**

Since transportation is the backbone of the over-all community or regional plan, and since a sound transportation plan must be closely related to land use and other planning data, it is quite obvious that correlation of the two plans is essential. It is encouraging, then, that the present trend throughout the country is apparently toward a closer working relationship between the two disciplines—the traffic engineer and the planner.

Most urban areas are faced with the task of trying to provide necessary improvements to serve rapidly growing populations in rapidly expanding land areas. Although these problems will be accentuated as growth continues, they are not insurmountable if properly approached. Balanced systems of transportation can and should be provided. Elements of the balanced system include interstate and other expressways, arterial streets, parking, and transit. Balance will vary, depending on the size, shape, history, and future function of the city. Transportation plans should be related to and be compatible with land-use plans if they are to provide urban communities with maximum efficiency.

To achieve the proper balance in the most economical manner, full cooperation must exist between the proponents of public and private transportation,
between the planner and the traffic engineer, among all levels of government, and among all political jurisdictions.

Usually, it is the cooperation among the various political jurisdictions that presents the most difficult part of the problem. Some progress has been made in this direction but still we must overcome the rivalries and tangled barriers that continue to divide many urban areas. While the problems are great, the benefits to be derived are even greater.